

CLAIMS

1. An apparatus configured to transport one or more packets within a frame, comprising one or more nodes configured to add and/or drop at least one of said one or more packets from said frame.

2. The apparatus according to claim 1, wherein said one or more nodes comprise add/drop multiplexers (ADMs).

3. The apparatus according to claim 1, wherein said one or more nodes comprises SONET/SDH add/drop multiplexers (ADMs).

4. The apparatus according to claim 1, wherein said frame is further configured to optimize a bandwidth of said apparatus.

5. The apparatus according to claim 1, wherein said apparatus comprises a fiber optic network.

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6. The apparatus according to claim 1, wherein said apparatus comprises a SONET/SDH fiber optic network.

7. The apparatus according to claim 1, wherein said packet further comprise a header configured to identify a data type of said one or more packets.

8. The apparatus according to claim 1, wherein said header comprises frame specific information.

9. The apparatus according to claim 1, wherein said one or more packets are selected from a group consisting of IP packets, Packet-Over-SONET/SDH (POS), PPP packets, ATM cells, G.702-based PDH (T1/T3) packets, Frame Relay packets, and any other byte stream.

10. The apparatus according to claim 1, wherein said apparatus comprises a media selected from the group consisting of

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ring and point-to-point networks and non-SONET/SDH configurations such as point-to-point WDM networks.

11. The apparatus according to claim 1, wherein each of said nodes is further configured to determine a reusability of each of said one or more packets.

12. The apparatus according to claim 11, wherein each of said nodes is further configured to determine a reusability of each of said one or more packets in response to a reuse bit.

13. The apparatus according to claim 1, wherein each of said one or more packets comprise a payload header configured to store packet specific information.

14. The apparatus according to claim 1, wherein each of said one or more nodes is selected from the group of (i) terminal multiplexers and (ii) SONET/SDH ADMs and (iii) data-aware SONET/SDH ADMs and (iv) digital cross-connects (DCCs)

15. An apparatus comprising one or more nodes configured to interface a network, wherein each of said one or more nodes is configured to interface one or more data types.

16. A method for transporting one or more packets each comprising at least one of a plurality of data types within a frame, comprising the steps of:

- (A) adding at least one of said one or more packets; and
- (B) dropping at least one of said one or more packets.

17. The method according to claim 16, comprising the step of:

- (C) identifying a data type of said one or more packets.

18. The method according to claim 16, wherein said one or more packet is selected from a group consisting of IP packets, Packet-Over-SONET/SDH (POS), PPP packets, ATM cells, G.702-based PDH (T1/T3) packets, SRP packets, Frame Relay packets, or byte-stream.

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19. The method according to claim 17, further comprising
the step of:

(D) determining a reusability of each of said one or
more packets.

20. The method according to claim 19, wherein step (D)
is further configured in response to a reuse bit.

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